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Fire Support in Low Intensity Conflict

Is Current Doctrine Adequate?

A Monograph
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ABSTRACT

FIRE SUPPORT IN LOW INTENSITY CONFLICT--IS CURRENT DOCTRINE ADEQUATE? BY MAJ Donald G. Oxford, USA, 51 pages.

This monograph examines the adequacy of current fire support command and control doctrine for the employment of U.S. forces in a low intensity conflict (LIC) environment. Current Army doctrine establishes the fire support coordinator (FSCOORD) provided by the field artillery as the principle point of contact for the integration and synchronization of fire support into the scheme of maneuver of the force commander. Recognizing the commitment of U.S. forces in LIC is likely to be a joint operation involving a brigade size task force including its direct support field artillery battalion, the FSCOORD must have doctrine available which is adequate to meet the special demands of a LIC environment.

The monograph first reviews current LIC doctrine applicable to fire support considerations and provides an overview of current field artillery responsibilities. It then examines fire support lessons learned from the French Indo China war, U.S. forces in Vietnam, U.S. forces in Grenada, and from observations of recent training rotations at the Joint Readiness Training Center. Recurring problems are discussed as they compare or contrast with existing fire support doctrine, revealing several inadequacies in both doctrine and training.

The most significant inadequacies in doctrine are found in command and control of fire support coordination. The most significant training inadequacies are found in the area of survivability.

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I. INTRODUCTION

Firepower and Low Intensity Conflict

Field Manual 100-5, Operations (FM 100-5), provides doctrine for how the United States Army will fight and is applicable to joint, combined, and tactical operations worldwide.1 The Airland Battle doctrine of FM 100-5 focuses on mid to high intensity warfare. Conditions have changed since World War II. With the advent of nuclear firepower, national leaders can no longer trust in purely military means to achieve total or absolute victory. According to Martin Van Creveld:

> ...politics, which had been edged into a corner by the evolution of modern total war between 1914 and 1945, emerged with a vengeance and has assumed a greater role than ever in governing armed conflict.
>
> In a world increasingly dominated by weapons too powerful to use, large scale sustained conventional warfare as practiced through the ages appears to be running short of space. ... Living in the shadow of nuclear weapons, men are increasingly turning to forms of conflict to which those weapons are irrelevant--that is insurgency and counterinsurgency above all.2

Insurgency and counterinsurgency are a portion of the spectrum of war defined as low intensity conflict (LIC). LIC is defined by the President as:

> ...political-military confrontation between contending states or groups below conventional war but above routine, peaceful competition among states. ... Low intensity conflict ranges from subversion to the use of armed force. It is waged by a combination of means employing political, economic, informational, and military instruments.3

Current national security strategy of the United States for

LIC recognizes the most appropriate application of U.S. military power is usually indirect through security assistance, but does not rule out direct military involvement with U.S. forces.4 In recent years U.S. Army units have deployed to countries involved in LIC as a display of resolve to support their legitimate governments. The increased potential for U.S. Forces to be employed in a LIC environment requires attention to Army doctrine and training for that contingency. This requirement becomes more acute when one realizes that future high intensity or total war will most likely involve concurrent low intensity conflict, increasing demands on available political and military power.

The Problem

Past experience has shown the most likely force structure to initially deploy to a LIC environment is one of brigade size or smaller, highly mobile for deployment (eg. airborne or airmobile infantry), and task organized to meet the needs of the immediate situation, therefore including organic and attached fire support assets (typically a 105mm towed howitzer battery or battalion). This was the case when the United States deployed the 173d Infantry Brigade (Airborne) with 3d Battalion 319th Artillery (Airborne), its direct support artillery battalion, to Vietnam in May 1965, the first U.S. Army combat units to be deployed there.5 This was also the case when a Joint Task Force was deployed to the Island of Grenada in 1983, for Operation Urgent Fury. The first units deployed had to adjust their operating procedures to fit the political-military situation and the environment. More recently,

units undergoing training at the Joint Readiness Training Center have experienced similar difficulties adjusting to the LIC environment as did the first units to Vietnam and Grenada.

If fire support units must adjust procedures to operate effectively in a LIC environment, then one must question the adequacy of existing doctrine and training standards. The portion of LIC in which large scale application of military combat power is most likely is counterinsurgency operations. The following question is researched: What inadequacies, if any, can be identified in current doctrinal and ARTEP standards for the command and control of available fire support by a direct support field artillery battalion (105mm Towed) in counterinsurgency operations?

Methodology

America's First Battles, 1776-1965, is a collection of essays compiled by Charles Heller and William Stofft, which analyze the way America prepared for, mobilized, and fought its first battles. The essays emphasize the need for looking at past lessons learned to prepare for future conflicts. This paper will use a similar approach by reviewing the lessons learned from experience in LIC for recurring problems, then contrasting and comparing the problems with current doctrine. Where inadequacies are found, implications will be discussed and recommendations will be provided.

Section II reviews current LIC doctrine to provide a better understanding of the LIC environment as it affects considerations

of mission, enemy, terrain and weather, troops available, and time, on the military commander's analysis for applying fire support. It also gives a general review of command and control tasks the field artillery must monitor or execute to integrate fire support into the maneuver commander's scheme of maneuver.

Section III presents fire support lessons learned from the experience of the French artillery in their Indo China war; the first U.S. artillery units in Vietnam; U.S. artillery deployed to Grenada for operation Urgent Fury; and observations of training rotations with LIC scenarios at the Joint Readiness Training Center, Fort Chaffee, Arkansas. The experiences cover a period from 1945 to 1989.

Section IV compiles the recurring observations for analysis. It contrasts and compares the observations with existing doctrine to identify inadequacies in either doctrine or training standards.

Section V provides the conclusion, restates significant findings, discusses their implications on current operations, and offers recommendations for meeting doctrinal needs.

II. DOCTRINE REVIEW

Low Intensity Conflict

The special parameters and considerations for the conduct of operations in low intensity conflict are discussed in the doctrinal manual, Field Manual 100-20, Military Operations in Low Intensity Conflict (FM 100-20). Military forces in LIC achieve strategic aims indirectly through support of nonmilitary actions directed toward the strategic aim. Military operations in LIC may

include tactically direct actions such as direct assistance, strikes, raids, and shows of force or demonstrations. Execution of military operations may be modified by political, economic, and/or psychological objectives. Even when U.S. military power is used directly against a hostile force, constraints of policy and strategy influence the principles of combat operations which govern tactical actions.6

There are four categories of LIC. The first, insurgency, has the objective of mobilization to gain support for a revolution. That of counterinsurgency is counterrevolutionary mobilization. U.S. Army operations in Vietnam were part of a counterinsurgency effort. The second is terrorism. Combatting terrorism includes antiterrorism and counterterrorism. Though its purpose is apparent, it is tremendously complex and demands meticulous coordination and international cooperation for both overt and covert operations. The third, peacekeeping operations, aims at maintaining regional peace which has already been achieved through diplomatic efforts. Normally a peacekeeping force is forbidden to use violence to achieve its mission. The last category, peacetime contingency operations, includes disaster relief, counter drug operations, and land, sea and air strikes. They are usually focused on a specific problem, may require the exercise of restraint and the selective use of force, or concentrated violent actions.7 Operation Urgent Fury in Grenada provides an example of success. The peacetime contingency operation was quickly

conducted, followed by peacekeeping operations with international assistance until the local government could stabilize control.

Commanders have two responsibilities in LIC. The first is to their mission and troops; the second is to exercise a constructive influence to achieve political and psychological objectives. These responsibilities include positive action to secure their force, safeguard supplies and equipment, insure rules of engagement (ROE) and legal restrictions are understood, and insure legitimacy of actions of the armed force. Soldiers must clearly understand specifically who is, and who is not the enemy. Troops must also understand that a tactically successful operation can be counterproductive if the local populace's perception of the conduct of the operation is negative.8

Principles for the defeat or prevention of an insurgency are unity of effort, maximum use of intelligence, minimum use of violence, and responsive government. Leadership considerations for command and staff actions in counterinsurgency operations emphasize:

--Detailed planning of small scale, decentralized operations.
--Command and control over extended distances and difficult terrain.
--Extensive contingency planning for the employment of quick reaction reserves, fire support, and close air support.
--Extensive training to meet the probable threat.
--Detailed coordination and direction of intelligence. Tactical intelligence is the key to defeating the guerrilla.
--Use of electronic combat operations.
--Detailed planning and close coordination with nonmilitary government officials.
--Support of the government's internal development programs in the operational area.
--Integration of support functions, especially aerial resupply, into all planning.9

A mass oriented insurgency is the type more likely to require the introduction of military force. The evolution of each phase of a mass oriented insurgency may extend over a long period of time. A successful insurgency may take decades to start, mature, and finally succeed. An insurgency involving a large area may show different stages of development in widely separated or isolated regions. The phases of a mass oriented insurgency are:

> Phase I: (latent incipient) insurgent leaders begin organization, government infiltration, and open political activity.
> Phase II: (guerrilla warfare)
> --initiation: insurgents conduct low level violence, sabotage, and terrorism; increase propaganda and PSYOPS; politically mobilize the masses; seek international support; create base areas for guerrilla activity.
> --insurrection: insurgents continue to establish or expand base areas, guerrilla activity, and proclaim a counter-government.
> --consolidation: insurgents expand attacks and political activity; enlarge forces; enlarge and link base areas.
> Phase III: (war of movement)
> --confrontation: conventional military force structure is developed, insurgents begin conventional warfare while continuing guerilla warfare.
> --finalization: insurgents establish a national government and consolidate military political dominance.10

Insurgent military forces fall into two categories: main force, and regional force. The main force is a body of well trained, highly motivated soldiers forming an elite fighting group. The main force is under national level control and deployable where needed. The regional force is normally composed of persons recruited from local militias or directly from mass civil organizations. The regional force normally confines its operations to a specific region, state, or province.11

The enemy in a counterinsurgency operation is elusive. He does not provide a clear target. He can strike from all directions, in any terrain or climate, seeking to avoid direct combat while striking at weak points. Three factors guide guerrilla maneuver forces. In attacks, he will attempt to get as close as possible to deter the use of the superior firepower of friendly forces and offset his numerical inferiority. Guerrillas will use infiltration tactics to reduce enemy morale and block routes of withdrawal. Guerrillas will conduct most movements and operations at night or during periods of limited visibility to reduce their enemy's advantage of air support.12 Achieving significant, visible results against the guerrilla is not always possible.

Units tasked to perform counterguerrilla operations must be prepared to deploy and operate on short notice, and trained to operate in the special environment of the area in which they may be tasked to fight. Insurgent activity typically begins in areas difficult for the government to control. Remote areas permit isolation from government controlled population centers and military bases. Urban areas provide a setting in which the insurgent can easily blend in with the crowd and be difficult to distinguish. Border areas provide escape routes and safe havens, especially in remote areas of countries which attempt to remain neutral. The nature of operations against the insurgent who operates closely with the civilian populace requires strict observation of rules of engagement (ROE). ROE provide guidance

for the application of firepower and clearance of fires in civil military operations. Specific military considerations for the LIC environment include:

--a requirement for high mobility.
--provision for aerial resupply.
--provision for close air support reaction forces.
--coordination and combined operations with local police to assist in control of riots and other disruptions.
--coordination for use of civil facilities and the cooperation of the local government.
--planning for communication nets with police, local government, and host nation military agencies.
--coordination of engineer support for maps, city plans, installation locations, and descriptions.
--planning for population and resource control.
--maintaining a positive media image.
--coordination of specific civil military assistance for medical evacuation, graves registration, refugee control, food, shelter, water, hygiene, utilities, and damage assessment, clearance and repair.13

FIRE SUPPORT DOCTRINE FOR LIC

The mission of the field artillery involves dual responsibilities. FM 100-5 establishes the field artillery as the principle fire support element in fire and maneuver. The field artillery provides conventional and special ammunition fires with cannon, rocket, and missile systems; it also integrates all means of fire support available to the commander.14

> Fire support is the collective and coordinated use of indirect fire weapons, armed aircraft, and other lethal and non lethal means in support of a battle plan. Fire support includes mortars, field artillery, naval gunfire, air defense artillery in secondary mission, and air delivered weapons. Non lethal means are EW [electronic warfare] capabilities of military intelligence organizations, illumination, and smoke.15

The force commander exercises command and control over his own organic fire support systems but not over external fire support assets. The integration and synchronization of available fire support systems into the scheme of maneuver is accomplished through the fire support coordination and planning process. Cooperation among various agencies is necessary.

> (This) cooperation (is) a product of the directive force of the commander to drive the fire support system as a whole and the authority he gives the fire support coordinator to execute it. ..... Direction of the fire support system is the responsibility of the field artillery commander. The force commander charges him to ensure that all available means of fire support are fully integrated and synchronized with the battle plan. He serves as the force commander's fire support coordinator (FSCOORD) and speaks for the force commander on all matters pertaining to fire support.16

At each level of command from company through brigade there is a fire support coordination center, established by the brigade FSCOORD, and manned by personnel from the brigade's direct support field artillery battalion. At company level a field artillery lieutenant leads a fire support team (FIST) in support of the company. The brigade and battalion fire support elements (FSE) are collocated with the maneuver unit tactical operations center (TOC). At battalion level a field artillery captain is the fire support officer, responsible for the training of subordinate FIST leaders. At brigade level, the FSCOORD is assisted by a fire support officer who supervises brigade FSE personnel.

When naval gunfire is available, the air naval gunfire liaison company (ANGLICO) will provide a platoon to the brigade. The platoon provides a supporting arms liaison team (SALT) to the maneuver battalions' FSEs. At company level the FIST leader coordinates naval gunfire through a firepower control team provided by the battalion's SALT. Personnel from the platoon advise and assist members of the FSE in coordination and control of naval gunfire.

The Air Force also has representatives in the FSE. Tactical air support is coordinated through the air liaison officer and his tactical air control party (TACP) at the brigade FSE in conjunction with the brigade S3 Air. At company level the FSO coordinates necessary air support through the Air Force forward air controller.

In addition to the Navy and Air Force representatives, fire support coordination also involves engineer support. The brigade and battalion engineer officers are not required to have a representative in the FSEs. However, it is necessary to coordinate fire support with the engineer for breaching obstacles, covering obstacles by fire, and emplacing air or artillery delivered scatterable mines.

Fire support systems the brigade may have available include its own organic mortars, antitank weapons, its direct support field artillery battalion (possibly with reinforcing artillery units), organic and attached target acquisition systems, organic and tasked air defense artillery weapons, tasked naval gunfire

support, and tasked tactical air support. An important factor in the employment of fire support is the restrictions placed on its use, including type weapon or damage caused. The counterguerrilla unit must be prepared to operate with little or no fire support because of these restrictions.

Areas of operations are usually larger in counterguerrilla operations than in conventional operations. The range of counter guerrilla operations should not be tied to the range of fire support assets.17 When operations take place outside of existing fire support weapons systems range, the maneuver commander must provide for increased capability to reinforce or extract engaged units, coordinate changes to existing fire support, or coordinate additional fire support with appropriate range and capabilities.

Mortar platoons are normally kept under maneuver battalion control and are the most responsive indirect fire support assets to the battalion. They normally occupy positions in the battalion operational support base. If they are required to move or operate outside this base, additional security must be provided to them. Depending on the situation the mortar platoon may or may not operate from an established base.18

Field artillery employment might be severely restricted by rules of engagement (ROE). In all cases the application of firepower must reflect the principle of "minimum essential force."19 Normally, the field artillery batteries, consisting of 6 howitzers each, will operate from battalion operational support bases when the battalions of the brigade are widely dispersed.

Field artillery fires may be requested by self defense forces, police, security elements, and other agencies in addition to the supported combat unit.

For target acquisition the brigade has both ground and air sensors available. Ground sources include combat reports and battlefield surveillance enhanced by electromechanical devices organic to brigade units. Locating devices such as electronic direction finding equipment and moving target locating radars may be attached from the division's communication electronic warfare battalion, and countermortar and weapons locating radars from the division artillery target acquisition battery. Aerial sources include aerial observers with aircraft placed under control of the brigade by division, and information gained from division and higher level aerial assets. Timely dissemination of targeting information is essential in counterguerrila warfare.

After acquisition of targets and development of the battlefield situation, tactical operations against available targets are planned. Tactical operations normally include ambushes, raids, movement to contact, hasty/deliberate attacks, exploitation and pursuit, and defense of key installations. In counterinsurgency operations, missions for fire support assets will normally center around consolidation and strike campaigns conducted by the maneuver forces. Tactics associated with fire support in a conventional offense or defense still apply.20

Field artillery firing units must be positioned to provide maximum coverage to protect population centers, lines of

communication, and government installations. Positions must be planned to provide firing units with mutual support.

Counterguerrilla operations normally dictate the following:

-- Enforcement of host country rules of engagement.
-- Reduced capability for brigade level control of forces.
-- Greater security requirement for weapons positions.
-- Requirement for omnidirection fire support capability.
-- Close coordination with host country officials in the area of operations.
-- Avoidance of indiscriminate fire support to preclude noncombatant casualties.
-- Coordinated fire support for airmobile operations, aerial resupply, joint air attack (JAAT) team operations.21

The ARTEP outlines tasks, their conditions, and performance standards which a unit must perform to successfully accomplish its mission. The ARTEP provides the commander a basis for evaluating the training status of his unit to coordinate an effective training program. The field artillery battalion ARTEP evaluates performance of the battalion command group's responsibilities to command and control:

-- battalion fire support coordination operations.
-- target acquisition operations.
-- delivery of field artillery fires.
-- battalion communication operations.
-- battalion movement operations.
-- battalion service support operations.
-- survivability operations.22

In the following sections, lessons learned and associated analysis focus on the command and control tasks in the sequence shown above.

III. FIRE SUPPORT LESSONS LEARNED

French Indo-China

Following the departure of Japanese troops from French Indo-China, French forces there were faced with the challenge of finding equipment to replace that lost to the Japanese and a challenge to their colonial authority by the Viet Minh. The Viet Minh were followers of Ho Chi Minh, and believed that if the French forces could not stop the Japanese, they could not stop a mass insurgency aimed at the elimination of French colonial rule. The Viet Minh had been actively resisting the Japanese occupation of Indo-China, and had already organized phases I and II of their mass insurgency.

The phase III military action included use of artillery by both the French and Viet Minh. Artillery weapons were initially limited to those left following the Japanese evacuation. Later, artillery available to the French forces included a variety of calibers, some of which was provided by the United States.

The French artillery group equated to an American artillery battalion. It consisted of an headquarters and service battery and three firing batteries with four to six howitzers each.23 These groups were normally deployed in operational fire bases to provide area field artillery support to maneuver units. They were sometimes deployed with mobile units to provide more responsive field artillery support to the maneuver commander. Command and control responsibilities were similar to those required of an American battalion. These were sometimes executed differently than in an American unit; however, the lessons learned remain pertinent and worthy of consideration.

In 1946, the commander of the French artillery in Indo-China wrote:

> As a general rule, the errors do not stem from a surprise brought about by the special nature of operations in Indo-China, but simply from the fact that the great principles included in our regulations confirmed and completed by the teachings of the last war are forgotten.24

Regarding the responsibility of fire support coordination, the cooperation between the artillery and combat branches did not provide expected results. The cause was the lack of training of artillery liaison officers (FSOs) and their lack of influence with inter branch leaders whose views were too narrow or demanded more than could be provided. Some commanders felt they had insufficient freedom of action when artillery support was centrally controlled by higher headquarters.25 A great number of mobile group commanders did not possess a knowledge of the capabilities and limitations of the artillery, an appreciation for the decisive effects of artillery, and a concept of the role of the artillery in assisting the maneuver plan.26

The artillery firepower was overshadowed by that of the Air Force. However, the artillery played a primary fire support role because of its ability to provide continuous fire support in all weather, responsiveness, and the precision of fire. A need was seen for the establishment of a command and control system which allowed centralized fire control within the territory of all available fire support systems.27

Target acquisition was difficult against the Viet Minh. The main mission of the French mobile forces became finding the enemy and destroying his forces one by one. Finding the enemy was the difficulty. Intelligence gained was quickly outdated. The General Staff assessment of artillery was that either too much or too little was asked of it, while acknowledging its decisive role in the annihilation of Viet Minh units when these could be cornered in a village.[28] Dense vegetation made aerial observers more valuable. The requirement for the aerial observers to communicate with ground forces combined with a lack of known references implied a need for simple procedures to orient artillery fire, the observer, and ground forces.[29]

In providing field artillery fires considerations had to be given to positioning of tubes to provide omnidirectional coverage and support for the friendly force. This requirement in turn led to omnidirectional fire direction capability by the fire direction centers.[30] According to the General Staff, artillery and mortars had a very limited output because of: lack of accurate maps; incapacity to use aerial photographs for targeting due to lack of reference points; maneuver difficulties due to dense vegetation; inaccuracy of intelligence on the enemy; and, inability of artillery observers to observe enemy actions.[31]

The fleeting nature of the targets and type operations conducted did not allow many opportunities for massing fires.[32] Time was often lacking for conduct of proper registrations. Too much time spent adjusting for accuracy led to loss of the target

prior to fire for effect. It would have been better to fire for effect after the first salvo, making a bold shift on the target.33

The difficult terrain combined with long lines of communication to widely dispersed operational bases made wire communication difficult to establish and maintain. Radio was the primary means of communication. Movements required detailed planning for fire support of both the maneuver force and the supporting artillery unit. Route security was impossible to guarantee. Service support considerations included difficulty in resupply of ammunition, especially in terrain without roads or trails. For support of units in rough terrain, it was better to have fewer weapons with more ammunition than more weapons with insufficient ammunition. Aerial resupply presented a threat to operational security because it signaled unit locations to the enemy.34 Difficulties in supplying ammunition led to problems with fire plans. Sufficient rounds to achieve necessary effects on targets or to execute final protective fires were not available.35

The French learned that the immobilization of a large part of their soldiers for security missions was one of the main characteristics of a war without a front. Mobile units had to use approximately 25 percent of their strength for the protection of their artillery, command posts, and heavy equipment. More than a third, if not half, of the activities of the infantry were guard duties and surveillance. The French General Staff observed that

these burdens could have been lighter, had there been more reliable information about the local enemy.36

Other survivability considerations included protecting artillery with artillery. Mutual support of firing positions was needed. Vulnerability of firing positions increased as capability of enemy armament improved, implying a need for counterbattery fires.37 Toward the end of hostilities, counterbattery fire was becoming an everyday mission instead of an exception.

U.S. in Vietnam

In the analysis of the relationship between firepower and maneuver in Vietnam, fire was more dominant than maneuver. Maneuver during contact with the enemy was primarily performed for the purposes of:

> -- fixing the enemy so that fire support could become more effective.
> -- to maintain a continuous application of fire.
> -- to prevent friendly forces from inhibiting the application of fires.38

In addition to U.S. military forces, military forces from several nations deployed to assist the government of Vietnam eliminate the militant insurgency and stabilize the nation. Vietnamese military forces included the Army of Vietnam and Vietnamese regional forces. Artillery employment of all forces involved had to be coordinated.

Regional forces in Vietnam were security forces primarily drawn from the local population, with their area of operation usually confined to their own province or district. Their military performance was often erratic. Their existance

complicated problems of command and control, requiring increased coordination to determine the scope and location of their operations in order to avoid fratricide.39

The Army of Vietnam also suffered command and control problems with its artillery. This was due in part to the lack of trained leaders who knew the capabilities and limitations of their weapons. Some Vietnamese commanders over controlled their artillery commanders, imposing restrictions such as requiring specific permission to fire, impairing responsiveness. Other causes were poor operational practices learned from the French and those developed by the Vietnamese over time. Their most notable error was the use of artillery as primarily a defensive weapon.40

After an extensive U.S. military advisory effort was determined to be insufficient to assist the Vietnamese in countering the insurgency threat, approval for introduction of U.S. combat forces was granted in 1965. The first U.S. Army artillery unit assigned duty in Vietnam was the 3d Battalion 319th Artillery (Airborne) in direct support of the 173d Airborne Brigade (Separate), arriving in May 1965. Although the battalion trained for its arrival, it was not totally prepared for counterinsurgency and counterguerrilla operations. During the battalion's first month it was involved in two major operations in support of the 173d Brigade. On 27 and 28 June 1965, it provided coordinated fire support for two U.S. infantry battalions, two South Vietnamese infantry battalions, and elements of the Royal

Australian Regiment. It coordinated artillery fires and close air support for airmobile and ground combat operations.41

The 3d Battalion 319th Artillery was faced with a problem of fire planning with the existence of multinational forces with different weapons systems. This complicated the fire planning process. In Vietnam fire planning was basically informal because of fluid situations, lack of accurate and detailed intelligence, dispersal of units, and the fact that continuity of operations did not permit time required to prepare formal fire plans.42

To provide effective support, control measures such as no fire zones, specified strike zones, and free fire zones were designated. When possible, prior zone clearances expedited fire support operations. Otherwise, fires had to be cleared with the lowest echelon of the local government. Clearing fires delayed fire support missions up to 10 minutes. The impediment of ROE on responsiveness was cited in May 1970, report of Vietnam Lessons Learned #77 on Fire Support Coordination:

> The requirement for military and political clearance of fire on or near populated areas has an adverse affect on the responsiveness of artillery fire. The goal of responding within two minutes after receiving a fire request was seldom met for targets near any populated area. Clearance requirements commonly delayed missions up to ten minutes. It was not uncommon for the artillery to be unable to fire because of lack of clearance. To reduce time lost, liaison with local government agencies, and with allied forces, was established. The creation of combined fire support coordination centers minimized delays. The lack of responsiveness is a source of constant concern and frustration at all echelons of command.43

To reduce time delays, liaison with government agencies and allied forces was established. 3-319th Artillery saw a need to preclude the check firing of one system to accommodate another. The solution was to coordinate the employment of all systems involved in the operation. The battalion also was augmented by the attachment of one Australian 105mm towed (Italian design) battery, one New Zealand 105mm towed (Italian design) battery, and one U.S. 155mm towed battery. Fire support officers were required to be able to support not only U.S. forces but also allied or joint forces operating in their area of responsibility. Differences in language and methods of operation made this support difficult. The organic fire direction center capability was augmented with personnel and equipment from the allied batteries creating a combined fire support center permitting 24 hour operations and overcoming the equipment and procedural differences.44

Planning considerations and firing characterisitics of weapon systems are not the only essential elements of information for fire direction center operation. Fire planning also relies on accurate firing battery and target locations, and accurate determination of direction.

Terrain, poor maps, or no maps made land navigation and position determination difficult, causing some mistakes by forward observers. This sometimes resulted in restrictions placed on the artillery support by maneuver commanders until the artillery unit's competence was proven. Controlling fire support around the

numerous hamlets without radios or direct observation of targets required innovative techniques. Signal systems such as flares or flaming arrows were used to indicate an attack and its direction. Fires could then be delivered on preplanned targets near the village.45

To overcome the coordination problem with available tactical air support and army aviation, 3-319th Artillery devised a 1:50,000 map with an area grid system which assigned numbers to 10km by 10km grid squares. These were further subdivided to identify smaller squares with a rapid code. The air grid system overlay helped speed clearance of aerial fires through the appropriate fire support centers. Aerial rocket artillery from Army aviation was effective as close air support when controlled through artillery fire support channels.46

Detection of the enemy was the most difficult problem experienced in Vietnam.47 Target acquisition assets were valuable for target location and early warning. Countermortar radars were limited by their technology to only 43 percent efficiency.48 Moving target locating radars and ground sensors helped identify enemy movement and direction. Attack of these targets by artillery was the most responsive means available. Integration of these sensors denied the element of surprise to the enemy. The availability of artillery firepower and remote sensors made it easier to fire an artillery mission at suspected positions rather than send a patrol to identify and verify the target. This practice led to unnecessary casualties. Targeting enemy weapon

positions firing on the fire base was aided by careful terrain analysis combined with a knowledge of weapons available to the enemy. This method was somewhat dependent on luck, but proved effective for suppressive counterfire. Crater analysis was also important to an effective counterfire program.49

Forward observers with the companies were the best means of target acquisition. When augmented with aerial observers, they were very effective in support of overland ground movements. Their use of reconnaisance by fire techniques helped disrupt and expose enemy ambushes and other enemy actions forward of the maneuver units advance.50

The nature of the terrain and enemy operations affected the employment of artillery in Vietnam. In past wars gunnery errors seldom produced friendly casualties because rounds that cleared friendly lines were usually safe.51 In Vietnam there were no lines. The enemy operated among the local population. One study estimated that about 50 percent of all artillery missions were fired very close to friendly positions.52 3-319th Artillery observers had difficulty identifying friendly troop positions because of the dense foliage. Their solution was to use various marking rounds.

The terrain and enemy also affected the manner in which artillery units were deployed. In conventional operations, missions are seldom assigned to artillery units smaller than a battalion. Unconventional maneuver operations required changes to artillery tactics. The size of the area of operations and range

limitations of the artillery sometimes prevented the battalion from massing fires. Political considerations meant planning positions for artillery was performed at field force level to ensure units were positioned relative to each other to provide maximum coverage of population centers, lines of communication, and government installations.[53] The need to provide fire support to cover a large area dictated the positioning of units consisting of two or three weapons throughout the countryside.[54] The nature and size of targets more frequently encountered allowed effective engagement with four howitzers. Firing positions with only three or four howitzers used triangular or square patterns. A four tube battery was frequently more compatible with the small position areas available.[55] This piecemeal application of firepower was contrary to lessons previously taught at the field artillery school.

The need for omnidirectional fire support coverage led to the construction of 6400mil firing positions and circular fire direction charts to compute and allow more rapid traverse of azimuth of fire. Gun crews required training to allow weapons to be shifted rapidly. The battalion fire direction center was often too far removed to have an appreciation for the local situation of each battery, so each battery had to maintain the ability to tactically, as well as technically, direct its own fires. [Tactical fire direction is the selection of units to fire, volume of fire, shell fuze combination, and method of engagement;

technical fire direction is the computation of firing data used by the howitzers to engage the target.]

The use of harassing and interdiction (H&I) fires was the most expensive and least effective technique of employing artillery fire.[56] One reason for the use of H&I fires was the absence of sufficient hard target damage assessment on the results of fire. Thus, artillery commanders were often evaluated based on the number of rounds expended.[57] Civilian casualties and damage caused by H&I fires alienated a good portion of the civilian population.

H&I fires were also justified by the element of surprise which they allowed. The element of surprise was essential in attacking a fleeing enemy. Extensive surveys and registrations were often impractical because of time and terrain restrictions. Adjusting fires on targets to achieve desired effects reduced the chance for surprise. Artillery raids provided a means of achieving both surprise and desired effects on targets. The general idea of the artillery raid is to emplace a battery by helicopter as deep as possible into enemy territory, fire at preplanned targets and targets of opportunity expending approximately 1500 rounds during an 8 hour stay, and extract the battery. Artillery raids can be conducted in conjunction with maneuver force raids or alone. Performed by a battery, the raid has three purposes:

1. Strike targets acquired beyond the range of existing artillery positions.
2. Attack areas where the enemy feels secure from artillery fire.
3. Provide a deceptive ploy for impending operations.[58]

Mobility allowed the artillery to follow supported ground forces almost anywhere. Batteries separated from their parent unit had degraded freedom of movement, vulnerable wire communications, and line of communications distance problems. They could do little to support themselves administratively or logistically. If the separation was extensive, consideration was given to attaching the battery to the supported maneuver battalion. To overcome support problems inherent in the command relationship of "attached," distant batteries were placed "OPCON" to maneuver battalions.59

The batteries had insufficent personnel authorizations to provide for their own defense and conduct continuous 24 hour operations. This required augmentation by the infantry to provide protection for artillery positions, and protection for the conduct of artillery movements. Augmentation and support of distant units was a complicated process for the parent unit. To overcome the security problem, artillery and maneuver units were collocated in fire bases.

Artillery positioned in a fire base was arranged in width and depth to eliminate the need for adjusting the pattern of effects on the target (terrain gun position corrections). A star pattern with five howitzers at the points and one howitzer in the center facilitated a proper pattern of effects and also perimeter defense in all directions.60 Direct fire techniques by howitzers complemented perimeter defense. Innovative use of normal

munitions combined with detailed planning and readily available firing data ensured effective direct fire employment.61

To further enhance defensive firepower, mutually supporting fires were planned by one fire base in support of the other. This included choosing and registering on targets close to the defensive perimeter of each base. Mutually supporting fires were so critical that whenever a firing unit was moved outside the range of supporting fires, efforts were made to readjust positions to stay within range or to split a battery into two mutually supporting positions.62

Vietnam experience provided the most extensive lessons on use of artillery in counterinsurgency operations. The majority of commanders sent to Vietnam were not trained prior to their arrival as to the nature of the war and how to integrate and control the abundant fire support resources which were available.63 Orientation courses were established in country and lessons learned provided to the schools. Exchanging ideas and new techniques unique to the counterinsurgency environment was important. On the job training with a unit engaged in combat was the ultimate training experience. Liaison teams dispatched from the field artillery school to Vietnam determined that increased Vietnam oriented training was required. Emphasis was needed on 6400mil fire direction, counterguerrilla operations, reconnaisance, selection, and occupation of position, and fire support coordination responsibilities (FSO training in particular).64

U.S. In Grenada

The majority of assessments and lessons learned from the 1983 Urgent Fury operation in Grenada are classified. The following are unclassified extracts of findings from after action reports and lessons learned compiled by Headquarters, Training and Doctrine Command:

-- Doctrinally the field artillery FSCOORD is the focal point and primary agent for the commander in the integration of all fire support assets. The multiplicity of systems available in Grenada to the maneuver commander made this tenet especially important. The doctrine is correct and must be observed. Maneuver commanders must observe the doctrine, making it clear that their FSCOORD/FSOs are their overall fire support advisors. ANGLICOs and ALOs must coordinate all fires through the FSCOORD/FSO.

-- Doctrinal fire control measures of FM 6-20 were used and no violations occurred. Observations of fire restrictions significantly reduced collateral damage. The fire control measures were validated.

-- The AC-130 Spectre gunship was the most accurate and effective fire support system used.

-- Although there are a number of field manuals that govern naval gunfire and fire support during amphibious operations, there is no manual that governs operations of the nature of Urgent Fury--an army airborne assault on an island under the auspices of a joint task force, commanded by a naval commander. The complexity and uniqueness of the operation demanded close coordination during the planning process. This was not accomplished. Current fire support doctrine is inadequate for operations like Urgent Fury. Current fire support organizations in the Army are not organized nor equipped to conduct joint fire support planning in the absence of attached ANGLICO teams. Had the division deployed with its ANGLICO teams, the expertise and equipment to effectively coordinate fire support would have been present.

-- Artillery accuracy was significantly hindered by a number of factors (discussion classified, see reference). Artillery first round accuracy suffered from the inability to establish good directional and positional control. Rapid deployment forces must be trained in expedient methods to establish survey control quickly.65

Grenada operations involved a joint task force with indirect fire support available from Air Force, Naval Air, Naval Gunfire, and Army field artillery. The problems associated with the joint operation provided lessons for improvement of command and control of all means of fire support by a central agency: the Army field artillery.

Current Exercise Observations

Observations provided by MAJ Stan McGlothlin, the senior field artillery controller at the Joint Readiness Training Center (JRTC) from April 1987 to July 1989, reflect recurring problems similar to lessons learned in Vietnam and Grenada. He saw the most significant problems as the need for experienced or trained fire planners and training the way we plan to fight.[66]

In fire planning and coordination, FSOs with previous battery command experience are normally much stronger than those who have not commanded. The same is true for FIST leaders that have had previous battery experience. Frequently information reported to the S2 is not reported to the FSO. During LIC close combat there is a tendency to only use fire and maneuver or break contact without employing any type indirect fire screen. The common excuse is that the enemy was too close. The teaching point is that indirect fire can be delivered behind the enemy and adjusted onto desired targets, while avoiding fratricide. Such fires can be used to suppress, screen, destroy, neutralize, or block the enemy.[67]

The fire planner must also plan the use of available air

support, an area involving joint coordination. There is a lack of understanding of the employment of Joint Air Attack Team (JAAT) operations. Procedures for the coordination, synchronization, and employment of JAAT often are not discussed by responsible staff members of the FSE. When the ALO is not included in the fire planning process the close air support (CAS) plan is done in a coordination vacuum by the battalion FSO. The CAS plan usually does not reflect coordination with the S2 or intelligence preparation of the battlefield process. An additional indication of weak joint training is joint support of air assault operations. Fire support planning for air assault operations is weak overall.[68]

Fire planners often fail to consider the means of fire support organic to the maneuver unit. Employment of 60mm mortars is frequently overlooked by the FSO or platoon forward observers. There is confusion as to who controls the 81mm mortars. The mortar platoon leader is often disregarded as a key battalion staff officer in the planning process.[69]

In addition to planning fires, the artillery units must be able to defend themselves in the counterinsurgency enveironment. Survivability operations require improvement through joint efforts of the artillery and maneuver unit. Battery commanders are not making use of all the assets available to them to improve battery defense. Artillery batteries are requesting augmentation by infantry for position defense. Normally the request is turned

down by the infantry. When the artillery is attacked, fire support is unavailable and positions are often overrun.[70]

Effective joint planning and targeting, using all available fire support systems comes through experience and training. Indications from these observations of JRTC rotations are that home station training programs are not working all the battlefield operating systems.[71]

IV. ANALYSIS

Experience vs. Existing Doctrine

Recurring fire support command and control problems are primarily in joint fire support coordination, clearance of fires, fire planning, and survivability. Common problems in these areas include politically injected rules of engagement (ROE), lack of adequate maps, difficulty in targeting the enemy, joint procedures for planning fires, clearance of fires through multiple agencies, and a need for battery independent operations. These reflect both a need for improved joint training and changes to existing doctrine.

ROE create additional command and control problems by complicating procedures for clearing requests for fire support and fire plans. Only Field Manual 6-20-50, Tactics, Techniques, and Procedures for Fire Support for Brigade Operations (Light) (Final Draft) and Field Manual 100-20, Military Operations In Low Intensity Conflict address ROE. These field manuals do not list the agencies to be consulted nor the specific requirements or considerations for establishing rules of engagement. The basic

ROE is given as "use the minimum amount of force necessary." Without specific guidance as to the ROE for the situation, including appropriate fire support agencies, joint fire planning may be delayed because of unanswered questions, be inaccurate because of misunderstanding of fire support capabilities, or have negative impact because of use of a fire support system not addressed by the ROE. ROE must be established early to allow establishment of procedures for clearing of fires.

Clearing fires is doctrinally the responsibility of the fire support officer in conjunction with the supported maneuver unit operations officer. The FSCOORD coordinates with all joint force agencies in the FSE to insure fires will clear friendly positions. In LIC, additional agencies involved in clearing fires include host nation military and police forces, allied military and police forces, and all the local civilian governments in the area of operations. In remote areas without responsive civilian communications clearance with civilian agencies requires field expedient procedures. The situation may require additional liaison officers with appropriate language skills and additional communication assets. In combined operations, cooperation is essential between the allied governments and military to establish command and control relationships, priorities for fire support, and overcome language barriers. No doctrinal guidelines are currently established on how joint and combined clearance of fires will occur. No doctrine exists which enumerates the responsible

parties for establishing and providing or receiving liaison to facilitate the clearance of fire support.

The clearance problem is compounded by the possible lack of maps and survey control data. The typical LIC environment is a third world nation with large areas of unimproved terrain, lacking accurate maps and survey. Firing units must be able to coordinate fire support with applicable agencies using maps oriented with common survey control. Without common survey, typical fire support required in LIC, close to friendly positions, becomes dangerous with errors in target, observer, or firing unit locations caused by map errors. Such errors would not be blamed on maps as readily as the firing unit. Operations in areas without established survey control points degrades the utility of the battalion position azimuth determining system. Survey parties may not be capable of establishing survey control in a timely manner for establishing a common grid for fire support agencies. Current ARTEP manuals for the artillery battalion do not emphasize establishing survey in an areas void of any survey control. It is doubtful the existing survey capability of the battalion would be able to accomplish such a task without augmentation from division or corp level assets.

As noted in the lessons learned from Grenada, effective joint fire planning requires adherence to established doctrine of one FSCOORD coordinating all available fire support and the cooperation of joint agencies with the FSCOORD in that effort. Fire control measures, once established, are not a problem. The

synchronization of joint efforts is the problem. Field artillery manuals do not establish joint fire support doctrine even though the FSCOORD, provided by the field artillery, is responsible for its coordination. No joint doctrinal publication was found which establishes this responsibility, leaving room for joint services to interpret the extent of cooperation in both training and execution of wartime missions. Experience has shown initial cooperation, though well intentioned, to have defects which are resolved only after a period of costly trial and error. Effective past practices such as the use of the aerial grid system for reference are not well documented in primary doctrinal manuals.

Fire support planning procedures in current doctrinal manuals are based on an Air Land battlefield with definable security zone, main battle area, and rear area. The ARTEP evaluates the completeness and effectiveness of fire planning in the offense and defense for these areas. In LIC's nonlinear battlefield these areas do not necessarily exist. How does the FIST leader or FSCOORD develop an effective fire support plan for a LIC environment with fleeting targets which may appear anytime, anywhere, from the perimeter of the fire base to the limits of the maneuver force area of operations? Doctrinal guidance for fire support planning in the absence of a linear battlefield does not exist, and lessons learned from previous LIC experience are not well documented in doctrinal manuals. Current exercise observations noted the inadequacy of fire planning for the LIC environment. If doctrine existed, this might not be a problem.

Target acquisition problems can be expected to continue due to the nature of the target and the ability of insurgents to blend in to the environment. Doctrine for the establishment of an effective intelligence program exists. Its effectiveness depends on the agressive support of all civilian and military agencies involved. The LIC environment requires a saturation of acquisition means with highly responsive communication of information to provide effective targeting data.

Current doctrine addresses the vulnerability of fire support systems in LIC and leaves solving the problem to the maneuver commander. Position defense and security improvement are addressed in existing doctrine, specifically FM 90-8. Procedures for mutually supporting indirect fires are not detailed in current manuals. The establishment of an operational fire base for LIC is a matter of history and not well documented in doctrinal manuals. Past and current observations indicate a weakness in training for fire base establishment and operations.

V. CONCLUSION

Implications

The conflicts and training observations cited, covering a period from 1946 to the present, show recurring problems which indicate either the failure to learn from the past or inadequate doctrine and training to contend with lessons learned. Of all the artillery field manuals, only Field Manual 6-20-50, Tactics, Techniques, and Procedures for Fire Support for Brigade Operations (Light) (final draft) provides an in depth discussion of field

artillery support requirements and considerations for low intensity conflict and joint operations. Other manuals in the FM 6-20-XX series either provide only a limited overview of the fire support requirement for counterguerrilla operations or only recognize that the field artillery may be required to support a response to a range of threats from high and mid intensity conflicts to the demands of low intensity conflict.

ARTEP manuals also lack sufficient guidance for evaluating training readiness for LIC. The conditions and standards must be modified to meet the demands of a LIC environment.

Until doctrine is established which satisfies needs for LIC as identified above, backed with effective training, lessons will continue to be learned by costly trial and error methods. One lesson from the American experience in Vietnam is that victory is not based on the availability of superior firepower and its indiscriminate application in LIC. Doctrine must be developed which provides for the centralized control of fire support and emphasizes responsiveness while not sacrificing the political gains by indiscriminate use.

Recommendations

LIC contingency units for specific regions should be identified and tasked to enable commanders to plan, coordinate, and train for their LIC contingency mission with appropriate joint support. Joint doctrine for fire planning in LIC needs to be developed. FM 6-20-50 provides a good start but needs to be expanded with lessons learned from past conflicts. A joint effort

on the expansion is required to benefit from Navy and Air Force lessons learned.

To expedite fire support coordination, fire planning, and clearance of fires, special arrangements are required with the host nation military, allied nations, joint services, national and local civialian authorities. These include communication requirements, liaison personnel, and establishment of procedures, all focused on the interoperability of the combined effort. Within NATO and the Quadrapartite, special agreements have been established to facilitate fire support operations, called Standard NATO Agreements (STANAG) and Quadrapartite Standardization Agreements (QSTAG). No unclassified special agreements specifically addressing fire support coordination could be located for Latin American or third world countries which may become involved in LIC. Political action should be taken to establish standardization agreements with these governments which the U.S. has committed itself to support.

Target acquisition doctrine exists; therefore, overcoming the difficulty of targeting the enemy must lie in either training or improvement of target acquisition capability with additional equipment. Organic target acquisition systems of the field artillery battalion are insufficient and must be augmented from all sources for LIC. Additional assets could include ground sensors, counter battery/mortar and moving target radars, and additional human intelligence assets in the area of operations. Research and development of early warning, detection, and target

acquisition devices which would be more effective in LIC should be expanded or consideration given to procurement of current market equipment which improves current capabilities. Training should emphasize the rapid communication of time sensitive targeting information to the using fire support agencies.

Effective integration and synchronization of all available fire support can result only from attention to lessons learned and repetitive joint training. Current doctrinal manuals should include lessons learned from previous LIC experiences and emphasize including them in joint training. Maximum effort should be made to make this joint training as realistic as possible to get the full benefit of coping with the myriad of challenges posed by a LIC environment.

Training at home station must include all parts of the combined arms team. Training evaluations by the Joint Readiness Training Center will continue to provide input to doctrinal requirements for fire support in LIC as well as improving the training status of units that undergo evaluation and training there. Independent training without combined arms integration is insufficient. Combined arms and joint training experience will improve readiness for employment to a low intensity conflict. In the prophetic words of President Kennedy to the West Point class of 1962, at their commencement:

> "...a new type of war threatened freedom lovers, a conflict new in its intensity, ancient in its origin--war by guerrillas, subversives, insurgents, assassins, war by ambush instead of combat, by infiltration instead of aggression, seeking victory by

eroding and exhausting the enemy instead of engaging him. These are the kinds of challenges that will be before us in the next decade if freedom is to be saved, a whole new kind of strategy, a wholly different kind of force, and therefore, a new and wholly different kind of military training."72

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CORRESPONDENCE

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